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THE MODUS OPERANDI OF MEDICINES.

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THE manner in which medicinal substances produce their curative effects in a pathological condition of any organ or system of organs, is very little understood; the manner in which they produce their pathogenetic effects in a state of health, is also involved in the obscurity of hypothesis. And although this knowledge may not be indispensable to the successful administration of medicines in the cure of diseases—yet in the practice of an art which professes to be founded upon deductions from the exact sciences, it is desirable, if possible, to trace the connection between every cause and its ultimate effect. The explanations given by authors of the *modus operandi* of therapeutical agents, falls far short of anything satisfactory; they are, at best, only what relate to their remote effects—with vague conjectures as to their immediate action on the tissues and fluids of the body; but they do not reach their ultimate action on or relation to their chemical elements.

If we admit that all changes whatever, which take place in the elementary constitution of matter, both organic and inorganic, are merely chemical transformations—we see that the practice of medicine proper is only the aggregate of a series of chemical experiments, and the physician a practical chemist. But it is insisted, that it is unnecessary to know precisely how medicines operate, so long as we know they produce respectively certain constant effects. This may, so far as practice is concerned, be true. But the very ignorance of the chemical knowledge which would teach us their *modus operandi*, is the cause of innumerable blunders, in compounding and prescribing all complex preparations. A large portion of the prescriptions made in practice, are chemically incompatible; so that a decomposition and re-union take place between two substances, and a third is formed, different from either of the other two. This new compound may be either inert or poisonous—and at least will produce effects different from what ought to be expected. In this way the physician is often deceived, when prescribing a new medicine, or an old one in some new combination. In this way, too, valuable medicines are sometimes prevented from producing their legitimate effects, and are therefore condemned. It is often the case that an

incompatible compound is mixed together by the scientific physician, as well as the nostrum monger, in defiance of all chemical laws, and still produces wonderful curative effects; for although there was a perfect discord of affinities, between all the ingredients, still some compound was produced which contained the power requisite, and which might have been prescribed more scientifically and with less trouble. It is an indisputable fact, that a good practitioner and a poor chemist, in the same person, is a compound quite as incompatible as any in the materia medica.

Since the blaze of light from modern chemistry has shone upon the old empirical system of therapeutics, it has swept it away like vapor before the sun-beam; and with our ignorance of applied chemistry, we are left almost without a substitute.

While a few practitioners are laboring to deduce the entire practice from chemical principles, and are thereby constantly making dangerous experiments and failures—others constantly reject all new remedies and improvements, and plod their way by the dim and doubtful light of past experience, so that the aggregate of empiricism in therapeutics is, perhaps, as great as at any past time. It remains for further researches to discover and establish the *modus operandi* of remedial agents, and to classify them according to their true chemical and physiological relations to the system.

There are *three modes*, according to authors, by which the general operations of medicines may be explained.

1st, It is said "they produce their effects by actual contact with one or more tissues." But let us go a little farther back, and inquire, how do they act by contact? If we can find what the immediate chemical relations between them and the tissues and fluids are, we shall then have a point from which we can pursue them, step by step, until we arrive at the most remote change produced. When an acid and an alkali are mixed together in solution, effervescence ensues—and what caused the effervescence? It is caused by the chemical union of the constituents of the compound. But how was this union produced? By chemical affinity. Again, what causes chemical affinity? Here we must resort to conjecture, and say, perhaps it is caused by cohesion, which is itself caused by a particular internal molecular arrangement of particles—or perhaps by the molecules of each being in opposite electrical states. But here the explanation ends, and we are still in the dark. And it is true of all investigation, that a limit is set, beyond which we can never pass. We may trace one effect to its legitimate cause, and this to some other cause more remote, which is, still, but the effect of some other cause more deeply hidden; and so on, until all beyond is conjecture, and we must link the chain of our reasoning to the throne of the great First Cause.

2d, It is said "medicines act by an impulse conveyed by the nerves, through an impression made somewhere else." This is a gratuitous assumption—for it is not proved that the impression is made elsewhere than on the nerves.

How do we know whether the primary impression is made upon the nerves themselves, or upon the tissues? The nerves, instead of serving as mere conductors of impressions, may have undergone some chemical,

physical or physiological change, by the impression of a medicine which may increase their power of generating or conducting impressions, or may destroy this power entirely. The supposition that medicines act through the medium of the nervous system, either primarily or secondarily, does not assist the explanation.

3d, "Medicines act by contiguous or continuous sympathy, or by that which is excited by mere continuity and proximity of parts." Now to say that medicines operate by sympathy, is merely to give a name to our ignorance; matter, as distinct from mind, or spirit, can have no sympathy for other matter. Sympathy is not a physical or chemical action between particles of *matter*—but a hypothetical term implying some metaphysical action or condition; some state or act of mind, which though manifested *through* matter, is not *itself* matter.

Pathogenetic or pathological, as well as physiological, effects, may be produced upon the body through the medium of the external senses, or by an act of memory merely: as the sight of blood causes fainting; that of food, salivary secretion; of an emetic, nausea; the sight of one in covulsions, may cause them in another; cries of distress produce pain in a by-stander; unexpected intelligence or misfortunes sometimes cause greyness, apoplexy, syncope or death. The explanation of the action of medicines within the system, and *not out of it*, is what we are to consider. But the explanation of these mental or physico-mental phenomena belongs to metaphysics or physiology, and not the materia medica; this branch of medicine, therefore, is not amenable for their explanation. No such therapeutical force as *sympathy* can be proved to exist in the system; and when a distant organ feels either the curative or pathogenetic effects of a medicine, it must be from direct chemical or physical action on one or more elements of some tissue or fluid, which is felt along the course of the tissue to the organ in question.

We have now given a synopsis of the *modus operandi* of all the medicines in the materia medica. We may now give briefly the explanation of authors in relation to the operation of a few of the leading classes of medicines.

Tonics produce an augmented action of the circulation, temporary strength, and, finally, fever—when taken into the system in a state of health; but this condition is followed, after a short time, by collapse and debility. In both healthy and diseased conditions, they tend to dry up the secretions and excretions, and thus act as astringents; in this way they arrest night sweating, diarrhœa, and other excessive discharges. Thus a re-action is produced upon the current of circulating fluid, which causes the tide to set back upon the system and prevent depletion from morbid action. In this way, also, arterial blood is economized for nutrition, while the *vis medicatrix naturæ* restores health.

Febrifuges are anti-periodics in their action, and to some extent are all tonics. They are supposed to terminate periodical diseases, by imparting temporary strength and stimulus to the system, which interrupts their paroxysm during a sufficient length of time for nature to accumulate lost vigor and restore normal action.

Nauseating medicines restrain hæmorrhage, by causing faintness,

which relaxes muscular tone and energy, and thus lessen the force of the circulation, and allow coagula to form at certain points and close bleeding vessels.

Purgatives operate mostly by stimulating the muscular coat of the intestines, and thus increasing peristaltic action. The purgative effect of mineral waters is supposed to depend on the large quantity of water which holds in solution small quantities of mineral salts; the same salts dissolved in any water have the same effect. They are supposed to operate by the stimulus of distension, so that, after all, their operation does not depend on their peculiar constituents or combination. Some salts have so strong an affinity for water that they absorb the fluids from the surface of the intestines by exosmosis, thus overcoming physiological action.

Narcotics are supposed to act by their sedative or depressing influence on the nervous system; or, in other words, they *operate* by *operating*.

Astringents are supposed to exert their secondary effect on the blood, or bloodvessels from which the secretions and excretions are produced.

Emetics are local irritants, which stimulate the mucous membrane or nerves of the stomach, and produce vomiting by reflex action. This explanation is involved and unsatisfactory. Authors say vomiting can only take place through the medium of the nervous system; that the action of the spinal, and other nervous centres, constitutes the proximate cause. How do we know whether vomiting is the cause or the effect of this disturbance of the nervous system? These explanations of the operations of medicaments are of the same kind and alike unscientific and unsatisfactory, with the system of pathology which makes every disease a unity.

If we were to sum up the teachings of authors on this subject, and make an abstract, it would amount to no more than the assertion that *all medicines* produce their characteristic effects by *stimulating* different organs or tissues of the body. They do not explain the ultimate relation between the medicines and any particular substance or tissue of the organism. They only give the aggregate of a series of chemical and mechanical processes which had occurred primary to them. Thus the totality of medicinal or pathogenetic effects are thrown together and explained in a single word, as purgation, emesis, stimulation, &c.

We shall now consider the manner in which all medicines must be primarily related to the different chemical elements of the body, and attempt to show that there are only *two ways* in which every article of food or medicine, whether solid, or liquid, or gaseous, must act when taken into the system. It will then be apparent, that what we call the specific operation of medicines, is not really any part of their *action*, but only the manifest consequences of preceding chemical action of their elements; that tonics do not *directly* impart tone to muscular fibre; that cathartics do not *directly* produce peristaltic action; that febrifuges do not cure by interrupting the febrile paroxysms, &c.

The only two modes in which any substance can act upon the system as a medicine, are by *chemical affinity* and *electricity*. Mechanical or physical effects often result from these, but are no part of the primary ac-

tion. These are the only means by which *elementary* changes take place in bodies, whether organic or inorganic. This will be more apparent when we consider the conditions necessary for the development of either of these forces.

Electrical action may be excited between two bodies, either wet or dry; between gases, liquids and solids. Chemical affinities can only be brought into active play by high heat, eremacausis, or the presence of moisture. When two certain substances, both dry, are brought in contact, electricity may be excited; when two certain substances, one or both moist, are brought in contact, electricity or chemical affinity must, one or both, be developed. Whenever this is the case, a change of elements must take place between the two bodies; the old union is dissolved, and new ones are formed; so that these elements have different relations to each other, and to all other elements. In the human system, a long series of chemical changes may follow this first separation and re-union, and part of these changes may be manifested as the effects of medicines.

One obstacle to our understanding the *modus operandi* of medicines is, that the changes which follow their passage into the system are concealed almost entirely from our view. The pain which would succeed the swallowing of sulphuric acid, for example, would indicate the action of some powerful agent on the stomach, without giving any clue to the changes which were taking place in consequence of the affinity between the acid and the organic elements with which it was in contact.

Another obstacle is, that the elementary composition of the fluids and tissues is not constant and invariable in quantity or quality. But the greatest difficulty, probably, consists in the mixed and complicated nature of medicinal substances; and especially those from the vegetable kingdom. Those medicines which have the fewest elements, and are best known in their constitution, are most easily explained and understood in their action. The numerous elements in vegetable substances are all compatible and harmoniously united, during organic life, and all so combined as to allow the full development of the organism, the perfect performance of vital functions, and the consummation of its design. But when vitality closes, the juices evaporate, volatile matters escape, the organic elements undergo metamorphosis, and new compounds are formed; so that the chemical character is different in the dead plant, its constitution variable, and the union of its elements unstable.

In consequence of this weakness of affinity between the elements of organic bodies, their equilibrium is easily overcome by any disturbing force, so that the chemical character of any vegetable medicine is no index to its operation. We cannot predict what changes it will undergo, and what new compounds will be formed, when it meets with acids, alkalies, salts or gases, in its course through the system.

Opium, for example, is a complex substance, among the elements of which are the alkaloids, morphia, narcotine, codeine, thebaine and narceine, besides tannin, extractive and coloring matter, &c. Some of these substances have a strong affinity for others, which are held in solution or a state of unstable combination, by the fluids of the system, so that we must commence with the first changes in order to trace the ope-

ration through all its deviations until it leaves the system, or is assimilated to its tissues.

Medicines whose compositions are isomeric, generally operate similarly. Morphia, codeia and solania, are almost isomeric; they all contain about the same proportions of carbon, hydrogen and oxygen, and only a trace of nitrogen. Their peculiar and similar operation may depend upon this condition, as they must be similarly related to the elements of the body. According to Liebig, opium, nux vomica and cinchona, are supposed to take a part in the "transformation of the old, or formation of the new brain and nervous matter." Again he says, the substance of the brain and nerves is produced from the elements of vegetable albumen, fibrine and caseine. He concludes, in relation to the operation of medicines, "they must take a direct share in the change of matter in the body, and exert an influence on the formation or quality of a secretion by the addition of their own elements."

The Galenical preparations, such as infusions, tinctures and soluble extracts, have the advantage of being more pure and of operating on the tissues with greater promptness.

But from the complex character, feeble union and wide range of affinities, of all organic compounds, it is impracticable, if not impossible, to trace their passage through the body and ascertain their ultimate effects on all parts and functions. The only way, then, to study the *modus operandi* of medicines, in accordance with chemical laws, is to use those of the most simple and well-known composition, such as acids, alkalies, oxides, salts, alcohol, ethers, and vegetable proximate principles.

Several forces, besides chemical affinity and electricity, are supposed to exert some influence in the operations of medicines; viz., vital principle, animal heat, magnetism, mental action, and idiosyncrasy. But we are as unacquainted with the nature of these forces, as with electricity, or any other; we see their effects merely, and this is simply about all we know of them. To turn the explanation on one of these terms, or another, is to change the formula merely, without developing any new idea or illuminating an old one.

In such investigations, we almost imperceptibly transcend the limit of purely physical principles, and find ourselves finally groping in the maze of metaphysical abstraction. So attenuated and nice is the dividing line between actual knowledge and speculation, that we are willing to couple the logical expression of a physical fact with a metaphysical consequence, and thus yield assent to a fallacy, rather than destroy the chain which binds together a beautiful theory.

Galvanic or electro-galvanic currents may be developed by the action of free acids, often present in the stomach, upon the mineral elements of salts and oxides, taken as medicines. These currents possess electro-positive and electro-negative power, and tend to decompose and revive elementary combinations. They may also cause decomposition in some of the tissues of the body, since their affinities are weak, and they all contain, in their normal state, more or less animal matter. In this way the action of medicines is modified in some cases to an important extent.

We shall now leave the general consideration of our subject, and pro-

ceed to the explanation of the *modus operandi* of a single substance—viz., alcohol—as an example illustrating our views. In this explanation, although imperfect, we think we have traced the connection of cause and effect farther than has before been done; we claim, also, that the explanation is nearly correct as far as it goes; and, finally, that the operation of all medicines, of known elements, can be equally well explained.

Operation of Alcohol.—It is a principle in natural philosophy, that all bodies, in passing from a rarer to a denser state, evolve heat. Alcohol is lighter and less dense than water. When it is taken into the stomach, it mingles with the gastric juice or whatever fluid the stomach contains, and which is much denser than itself; consequently when the union takes place, the alcohol becomes more dense, and the mixture gives off several degrees of latent caloric. This may account for the first calorific effects felt in the stomach. The heat thus generated stimulates arterial action, by its tendency to expand in volume the blood and other fluids and tissues. This expansion, while it augments the bulk of the circulating fluid, diminishes the calibre of the vessels, thus rendering necessary a greater velocity in the circulating fluids; this increased velocity increases the friction between the blood and the sides of the vessels, and consequently augments the heat. After being absorbed, it passes with the blood through the lungs, where a part of its oxygen undergoes combustion in the capillaries, and thus increases animal heat. Its carbon and a portion of its oxygen unite to form carbonic acid, which acts as a sedative on the brain and nervous system. Alcohol, by its power of coagulating the albumen of the blood, causes in this way obstruction to the capillary circulation, which is followed by swelling and obstruction to the next larger vessels; this soon causes congestion of various points, which congestion re-acts upon the larger vessels behind those congested points, causes them to become distended, and thus exerts an injurious pressure upon the nerves lying in their vicinity. When this congestion and consequent pressure extend to the brain and other nervous centres, sensation begins to diminish, motion becomes irregular or involuntary, the senses wandering or entirely lost, and apoplexy and sometimes death ensues. This is termed intoxication; and when it terminates in resolution, the functions are gradually restored, without serious organic injury to the system.

To recapitulate in conclusion, briefly: alcohol acts as a *stimulus*, by furnishing to the different tissues an increased supply of highly-oxygenated blood; and by the heat it produces by mixture with other fluids: as a *sedative*, by producing pressure upon the nervous system by congested vessels, and by causing the whole system to become surcharged with carbonic acid. That this is the mode in which this medicine operates, seems to be established by its pathogenetic effects, by the treatment necessary to cure these effects, by analogy, by post-mortem appearances, and, finally, by chemical principles.

A NEW DISPENSATORY.

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MESSRS. EDITORS,—Permit me, as one who feels a deep interest in whatever pertains to medical science, to call the attention of my professional brethren to the paramount importance of critically examining every medical work of any pretensions to scientific value, no matter from what source it may emanate. The age for beautiful diction, elegant phrases, scientific mysticism, and theoretical speculations, has passed, and it now behooves those who have charge of the public health to speak in plain terms, and deal with those great facts only which really develope medical science. Every conscientious physician must admit that we suffer too many worthless books to find their way into the hands of students, whose minds are poisoned by acquiring falsehood, which they accept as truth, often because such books are sanctioned by those in whom they confide as correct judges. Medicine is a science which has to deal with life—not with dumb metallic machinery—and as the preservation of life and the public health are more important than the correct balancing of levers and wheels, so is medical science more important to the human race than the mechanic arts and sciences. Whoever writes a medical work, should aim only to deal in facts, and add to the great store of knowledge which the profession has been accumulating for the last three thousand years. If a physician aims to do this, he will not shrink from the scrutinizing search of the critic who attempts to measure the value of his publications. We have in the medical ranks gentlemen every way qualified to speak understandingly of new works, and as criticism must tend to purify our literature, what objection can be urged against even phillipine criticism of new medical books. We have, it is true, no publication in America exactly adapted to this kind of literature; yet there are numerous periodicals which I believe, from my knowledge of their editors and patrons, would admit of such a use as I propose. Concise and well-written articles of the proper kind are seldom rejected by our more respectable journals. A notice of a book differs from a critical review, and it is to be lamented that the cautiousness of our editors should so often lead them to admit or write *notices* of books, instead of critically examining them in such a way as to point out their defects and advantages; for there are few books published on medical subjects which are destitute of either defects or advantages.

An association of medical critics, actuated by benevolent motives, could do more in ten years to rid the medical profession of fungous schools, books, and practitioners, than all the sectarian debates that may be urged and carried on in a dozen ages. There is but *one* medical science—there are many systems, but what is true in one is true in all, and all that is true belongs to medical science. Medical science is the common property of all who practise the healing art. Whatever is correct practice in the professional career of one, is correct in the professional career of all.

I have been led into this train of thought—which might be greatly extended, were it not that I should ask too much of your space—by get-

ting hold of and partially reading an enormous volume, purporting to be The American Eclectic Dispensatory, by John King, M.D., Prof. of Obstetrics and the Diseases of Women and Children in the Eclectic Medical Institute of Cincinnati. The very name of the work suggests to the mind a few important questions, some of which I propose to examine for the benefit of those who may wish to procure and read the work.

Whatever is common to this nation, is American: e. g., we have a rail-road system, common to all parts of the Union, and different from rail-road systems everywhere else, and hence we say it is the American rail-road system. So we have an American common-school system, an American army and navy system of discipline, &c. &c. But when we speak of an American practice of medicine, and an American system of surgery, or chemistry, or botany, &c., we must inquire whether that practice of medicine, that system of surgery, that science of chemistry or botany, differs from other practices and systems in vogue in other countries, and is so universal in America as to be justly called *American*. Sit down and converse with the English, French or German physician, and it will soon be found that he, too, admits and contends for the correctness of the principle of eclecticism. And because he does not call himself an Eclectic, or a selector, is he any the less an eclectic? Is not eclecticism the same in all countries, and has it not a place in history even before the discovery of the American Continent? If the facts warrant an affirmative answer, there is no such thing as American Eclecticism.

In the next place, I contend that the work in question is not an eclectic collection. Perhaps this assertion may startle the author, but it is nevertheless true, and these are my reasons for the declaration. As the word eclectic is now and has ever been used, it means to *collect* and then *select*. Eclectic philosophy or science does not originate. It should gather together all declarations, and then like the winnower separate the wheat from the chaff; aye! even more, it should then select out the best of the wheat and discard as worthless the immature or decayed. So should the Eclectic physician collect the learning and evidence of all ages, schools and men, separate the true from the false, and then accept only the best of the true. Do our Eclectics of the West do this? Judging by Prof. King's work, I should say not.

Now, then, as Eclecticism, according to Prof. King, has its principal hold in the West, he ought, if he wished to localize his work, to have called it *Western*, instead of "*American*" Eclectic Dispensatory. Next it may be said, as will be apparent to all who examine the work, that he has *collected*, but paid very little attention to *selection*. It seems to have been an object to embrace particularly the whole vegetable materia medica; and the question seems not to have crossed his mind, whether many of those agents he describes, are not valueless in comparison to others of the same class. That Prof. King has invaded the system of others, and gathered stores of knowledge from which to *select*, may be inferred from his declaration in the preface to his work, that he acknowledges his indebtedness to Wood's Class Book of Botany, Rafinesque's Botany, Western Medical Reformer, Hill's Eclectic Surgery, Smith and Howard's Family Practice, Gunn's Domestic Medicine, &c.; and he might

have added, Good's Vegetable Mat. Med., Kast's Mat. Med. and Therapeutics, Mrs. Lincoln's Botany, Beach's American Practice, Thomson's Practice, &c. But after this general *collection*, there seems to have been little or no *selecting*, but a general appropriation of whatever suited his purpose. The work claims to be Eclectic, and yet the whole effort of Dr. King seems to be to get new agents and principles, whether valuable or not, before the public, and himself as the real discoverer of them. These points will be discussed in the review of other Eclectic works now before me.

In the next place Prof. King has overdone his work, and given us something more than a Dispensatory. The first 140 pages of the book are occupied with a synoptical view of the natural and artificial botanical classification of plants; and in this department the author shows a palpable want of correct information, which becomes more apparent when we examine the classes and orders in which many of his plants are placed. Men who do not thoroughly understand a branch of science, ought to avoid writing on it. From page 140 to 980, the materia medica is described. From page 980 to page 1298, we have the Eclectic pharmacy according to Mernel, the Institute druggist. From page 1298 to 1391, we have a vocabulary, numerous tables, and the index. Thus it will be observed that Dr. King's idea of a dispensatory embraces an encyclopediacal field. The book, taken altogether, is "a *great book*," i. e., if 1400 pages of an octavo-sized paper can make a book great. As to the execution of the book, in a typographical sense, it is well enough. It has just been issued from the press of Moore, Wistock & Keys, of Cincinnati, and as one I am glad to possess it, for thus am I enabled to fully understand the value of the school from whence it emanates; and if some really capable physician would collect all the dispensatories now extant, and make up a true eclectic work, physicians and the public would be vastly benefited. Within the last three years the Eclectic physicians at Cincinnati have issued, under the auspices of the Eclectic Medical Institute, quite a number of books:—Hill's Surgery, Newton on Ulcers, Bickley's Physiological Botany, Newton & Powell's Practice, Jones & Morrow's Practice, King's Dispensatory, and Buchanan's System of Anthropology, the last of which I shall beg to notice in a future paper. Dr. King's work, being one of some importance, I trust that some gentleman, with more leisure time than myself, will find it convenient to critically examine it, for it is high time that our medical literature was being purified.

New York, September 25, 1854.

THE LATE DR. JAMES WEBSTER.

[Communicated for the Boston Medical and Surgical Journal.]

James Webster, M.D., Emeritus Professor of Anatomy, Geneva Medical College, died at Louisville, July 19th, 1854, of disease of the heart. Dr. Webster was born at Washington, Lancashire, Eng., on the 26th of Dec., 1803. At an early age he emigrated to this country with his pa-

rents, and settled in Philadelphia, where his father became an eminent bookseller and publisher, and established the Medical Recorder, of which his son became afterwards one of the editors. Dr. Webster was originally destined for the bar, but his inclination soon led him to the study of medicine, in which anatomy soon became his favorite pursuit. He pursued his studies in Baltimore and Philadelphia, and after attending three full courses of lectures, two of which were in the University of Pennsylvania, he graduated at the latter in March, 1824, at the age of 20 years. Dr. W. was a private student of the late Dr. John D. Godman and succeeded him, on his removal to New York, as private teacher of anatomy.

As a successful teacher of anatomy, Dr. Webster had few if any superiors in this country. He was clear, precise and accurate, and always enjoyed a high degree of popularity with his students. His private classes in Philadelphia were crowded, and he succeeded in imparting to his students the same enthusiasm which he himself felt in the study of his favorite science.

About the year 1835 or 6, he removed to the city of New York, where he soon acquired considerable reputation as an operative surgeon, and especially in the treatment of diseases of the eye and ear. In 1842 he was appointed Professor of Anatomy in Geneva Medical College, and took up his residence in the city of Rochester—where, in a short time, he became one of the most prominent surgeons in western New York. In 1849 he was elected to the Chair of Anatomy in the University of Buffalo, where he continued to lecture until 1852, when he resigned from ill health.

Dr. Webster was a man of superior native abilities, and of extensive acquirements in anatomical science. He was exceedingly fluent and animated as a teacher, and never failed to command the whole attention of his class. His mode of teaching was that pursued by the late Dr. Godman, viz., to perform all the dissections before the class, demonstrating all the parts as he went along. Such was his great skill and facility in dissecting, that he usually went over more ground in a single lecture, than when the parts are previously dissected. The advantages attending this mode of teaching are sufficiently obvious.

As a surgeon, Dr. Webster was cautious, though bold and prompt enough when the occasion demanded. He was a neat operator, gentle and kind in his deportment to his patients, and remarkably successful. As a lithotomist and an oculist, he was one of the most skilful operators in western New York, and performed a vast number of operations of every kind.

Dr. W. was a man of fine social qualities, open, frank and gentlemanly in his manners, and generally conciliating in his deportment. He was generous to a fault, and with some failings, possessed equally great virtues. The thousands of medical men who have enjoyed the benefit of his teachings, will hear of his death with regret. *Requiescat in pace.*

October, 1854. L.

OBSERVATIONS ON EPILEPSY.

[Continued from page 162.]

I WILL, in the sequel, show how these views, namely, that epilepsy arises from debility, have been sustained by cases which have come under my treatment. It is well known that fear, or fright, is a *depressing* passion; and joy, an *exalting* one. Now, I have had a large number of cases, where epilepsy originated in the former, fear, but not one in which it was caused by the latter, joy. If these data are correct, and I think they are, it becomes a question whether they do not go to prove the diagnosis of epilepsy to be, from *debility*. In one of the first patients I ever had with epilepsy, it was induced by *fright;* and when I saw him first, he had had the convulsions more than a dozen years. When about 15 years of age, he, with another lad, a little younger than himself, was sitting up with the corpse of his grandmother. They were below, and the body of the woman in a chamber over their heads. Suddenly there was a clattering noise, apparently in the room above. They were both very much frightened, and the elder one had a fit, and continued to have fits about once in three weeks afterwards, for a number of years. The cause of the noise was discovered to have been the jumping of a cat from one side of a pantry to the other, in the upper entry-way, upon a batch of tin milk-pans. The weight of the cat causing the centre of gravity in the milk-pans to fall in a different place, precipitated them to the floor, and their falling occasioned the noise which the young man, for the moment, supposed was caused by the coming to life, or the resurrection, of his grandmother.

A young lady, who had been subject to epilepsy for seven years, stated, that the *first fit* came on immediately upon a physician's informing the family that her mother could not recover from a fit of sickness. The fits afterwards returned once in every two weeks.

A little boy, 6 years of age, had the *first fit* when an older brother threatened to give him to a large dog, by which the child had previously been much frightened.

Dr. Webster, of London, mentions the following case:—"Respecting the causes often producing epilepsy, he considered *terror* as one of the most powerful; of which a very striking example, some time ago, came under his observation. It was that of a young woman who was frightened by a fellow servant, disguised as a ghost, with a light in his hand, when he suddenly appeared before her, at the end of a dark passage. She became so alarmed as to fall down in a fit of epilepsy, which afterwards frequently returned."

Dr. Eberle says, "Fear, terror and grief, and other disagreeable sensorial and mental impressions, have been known to give rise to epilepsy. I have met with three instances that were excited by terror. Locker states that six out of fourteen cases of this disease, which came under his care in the Hospital St. Mark, at Vienna, were produced by terror."

I could name many other cases in which epilepsy has been induced by *fear;* but will not occupy further space to do it.

A large number of epileptics, certainly as many as twenty-five, who

have come under my care, have confessed that they were addicted, when young, to the habit of *masturbation;* and every physician knows that this habit, long pursued, prostrates all the vital energies. It is, perhaps, the most common origin of epilepsy.

Epilepsy is not, strictly speaking, often *hereditary*, though it frequently happens, where one of a family has the disease, others are apt to be affected with it. It is, however, in my opinion, more to be ascribed *to seeing their friends in these fits*—to frights on this account, than from any real congenerate transmission. The idea, which the writer wishes to convey, may be gathered from the following curious case, recorded in the Annals of Medicine for 1801:—"At the age of 24, the Marquis Anthony Julius Brignole was first seized with epileptic fits. Previous to this period his lady had borne him one son; at that time she was pregnant with a second, when, unfortunately, she saw him under his first attack. When with child the third time, the same unlucky occurrence took place. A fourth son and two daughters were begotten after the father was cured. The eldest son never had any epileptic symptoms; the second son suffered much from epilepsy; and the third son, after having borne many attacks, died in an epileptic paroxysm. Neither the fourth son, nor either of the daughters, ever had any epileptic symptoms."

This case was reported by Dr. Batt, of Genoa, and he appropriately asks, "may we not from these facts reasonably infer, that the epilepsy in these two children owed its rise solely to the agitation of the mother, independent of the father's ailing? and that it was properly connate, and neither congenerate nor hereditary."

Still, I am of the opinion, as has been already expressed, that there is sometimes what may be called a *hereditary predisposition* or *epileptic diathesis.*

Six cases of epilepsy have come under my treatment, where the disease was induced by, or speedily followed, loss of blood. Four were caused by *epistaxis;* two by hemorrhages from incised wounds. Besides these, many others have had the fits augmented and perpetuated by *venesection*, employed as a *curative* treatment. As Dr. Radcliffe has effectually answered Dr. Marshall Hall's argument in favor of bleeding for *congestion in epilepsy*, by showing that it could do no manner of good, as the fit commences *before* the congestion shows itself, and ceases *when* it ought to be the most violent (if caused by the congestion), that is, when the congestion is the greatest, it would seem as though no more need be said to induce all practitioners to cease using the lancet in epilepsy. Dr. R. with the strength of a giant, and the keenness of an eagle's eye, has scattered to the four winds all the arguments of so eminent a man as Dr. Hall in favor of such practice, and left the "*disjecta membra*" of all his successors in the same course of treatment, like the records and wealth of old Troy, "*nantes in gurgite vasto.*" Yet some physicians are found who still advocate the abstraction of blood to remove congestion in epilepsy. This only shows with what tenacity men cling to a favorite theory. Had they lived in the days of Galileo, they would not have believed that the sun stood still, and the earth turned

around ; or, in the days of Harvey, they would sooner have believed that the blood stood still, or, at the most, ran out from the heart in the night and back before daylight, than have adopted his demonstration of the circulation.

[To be continued.]

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON, OCTOBER 11, 1854.

Suffolk District Medical Society.—This Society held its regular monthly meeting for medical improvement on Saturday, Sept. 30, 1854, at 8 P. M. The President in the Chair. The Secretary read the records of the last meeting.

Dr. Bowditch, in allusion to a case of tuberculosis which he reported at the last meeting, said that the crepitation had been steadily increasing. Hectic was present, and loss of strength and appetite, all confirming the diagnosis of acute tuberculosis.

Dr. Bowditch reported three cases of empyema.

First. The patient, a physician, seventy years of age, had had an effusion into the pleura for three months ; had used diuretics, and applied blisters, &c. There was not much uneasiness or suffering. Feeling one day a little worse than usual, he applied to Dr. Bowditch, who punctured his chest and drew off one hundred ounces of pure limpid serum, by measurement. The patient went on doing very well after the operation, and in the course of a fortnight respiration was heard throughout the chest, though indistinctly. Subsequently, at an examination made at the end of a month, it was found that the fluid had not re-accumulated, though the lung at the lower part expanded but imperfectly.

Second. The patient, a young woman, had been treated by an Indian doctor, who gave her drastic purgatives, which injured much more than they benefited her. After nine months illness, and being considered hopelessly affected with phthisis, Dr. B. saw her. There was flatness throughout the left chest, and dislocation of the heart, indicative of an extensive effusion. A puncture was made, and two quarts of pus removed. The heart has since been slowly regaining its natural position, and although there is dulness over the lower part of the back, yet the respiration can be heard over the anterior and posterior portions of the chest down to the third rib, and a metallic tinkling, which was very perceptible after the operation, has disappeared. In this case, two of the lower ribs were separated nearly an inch, and a large tumor appeared. This tumor subsided immediately after the operation, and has never re-appeared, and the intercostal space soon became natural.

Third. The patient, a woman, three months advanced in pregnancy, was seized with symptoms of acute pleurisy. The effusion progressed rapidly, accompanied with much dyspnœa, orthopnœa and distress, and her friends were informed by the attending physician that she was liable to die at any moment. There was complete dulness on percussion, and the heart was pushed to the right side of the sternum. A puncture was made, and eight ounces of pure pus removed—a much less quantity than was expected. Has been operated upon several times since, and in all, about five quarts of

pus have been removed. Her appetite has improved, the pulse has become more regular, the orthopnœa has disappeared, and she has walked out of doors. The intervals between the operations have been lengthened of late, and an attempt was made to procure a permanent opening, but abandoned on account of the inconvenience attending it. The patient is now in the seventh month of pregnancy. The lung has gradually expanded, and the heart is in a more natural position. Opiates are given to quiet the cough, and a tonic course of treatment pursued.

Every new case convinces Dr. B. of the importance and safety of the operation. He alluded to another case, where puncturation had not proved successful. The patient, a young man, was suffering from a latent attack of pleurisy, when suddenly dyspnœa occurred, and a small portion of very fetid fluid matter was discharged. Dr. B. punctured ten days afterwards, but obtained only two ounces of fetid serum. Dr. B. attributed his ill success to the fact of there being a quantity of coagulable lymph in the cavity.

Dr. B. mentioned one other case where a fistulous opening was formed. The liq. iodini comp. was first injected, diluted, and subsequently in full strength. The discharge ceased, and the patient recovered in a month. Only a sensation of warmth was felt after the use of the injections.

Dr. Bowditch remarked that Dr. Wyman was the first who made use of the small trochar, and Dr. B. much preferred its use to the use of the larger ones. He had made use of the larger ones twice, and in both instances the pain subsequent to the operation was much greater than after the use of the smaller ones. He had feared an attack of pleuritis would be the consequence of the use of the larger ones.

Dr. Homans, Sen., in connection with the cases of Dr. Bowditch, alluded to a case which came under his care. The patient, a boy of eleven years, of extreme nervous temperament, had an attack of pleurisy, with excessive pain, much dyspnœa and orthopnœa. The left side of the chest, from the spine to the sternum, measured two inches more than the right. Finally there appeared, a little posterior to the heart, a sense of fluctuation, and subsequently a discharge of pus. The patient left the city some three months since. Dr. H. remarked, that had he known of the safety of using injections of iodine, he should have been inclined to make use of them in this case, to suppress the discharge. Dr. H. thought that it was better to make an artificial opening than to leave nature to provide an outlet.

J. B. Alley, *Secretary.*

Facts for the People.—T. D. Thompson, D. D. S., of the Baltimore College of Dental Surgery, is the author of a small volume entitled "Facts for the People, relating to the teeth; showing their influence upon the health, speech and looks, with directions for their care and preservation." No very striking novelties are discoverable in this treatise; for new facts are scarcely to be found in a branch of science which has been in the keeping of a class of men, the last thirty years, who have importuned dame Nature, till she has given up all her secrets, and revealed pretty much all that any one cares to know of the physiology or anatomy of the teeth. By this, however, we are not to be understood as undervaluing the properties of the book. Dr. Thompson has a happy tact in giving instruction, and he has presented whatever is most essential to be known to secure to the people the full use of their teeth. Very few have the happy art of writing so clearly on scientific matters, as to reach the minds of the million. The

man who can do so, becomes a public benefactor, and lays the community under perpetual obligations. Dr. Thompson simplifies abstruse things, and makes plain many points that appear obscure in other authors. He deserves the assistance of the medical press, to make known his merits.

New Work on the Materia Medica.—Messrs. B. Keith & Co., of the American Chemical Institute, New York, have in press, we are informed, a work on the concentrated vegetable medicines, which will be published sometime in November next. The Messrs. Keith & Co. have been successful in their preparations thus far, and we have no doubt that in time the alkaloids and resinoids of plants will generally take the place of the more bulky and crude material. A work, therefore, which shall specially treat upon these new remedies, will be of great service to the profession.

Official Visit to Lunatic Asylums.—A special committee of the City Council of Boston, together with the Board of Visitors of the Lunatic Hospital, will leave this city on the 19th, for the purpose of inspecting the several hospitals for the Insane, between here and Washington. Our hospital for the Insane poor, at South Boston, is now *over-crowded*, and it has become absolutely necessary for the city government to make further provision for the patients. It is proposed, therefore, to procure a site in the country, some four or five miles from the city, whereon can be erected suitable buildings for the purpose. A committee of the City Council, who have this matter in charge, visited South Newton last week, for the purpose of examining a large tract of land which had been offered them at a certain price. The lot contains upwards of two hundred acres, most of which is covered with beautiful forest trees, and would be a most desirable place to locate the hospital, were it not so far from the city. We hope that it may be located inland, as has been suggested by members of the City Council.

Etherization in Parturition—Its Effects upon the Fœtus.—It has been thought by some of our most eminent physicians, that the fœtus is incapable of becoming etherized, or sensibly affected by ether in consequence of its administration to the mother while in labor. Now we have repeatedly observed its effects in such cases; and in the Journal, sometime since, we gave an account of a case, where ether was discoverable in the child several days after its birth. We had a case of labor last week, where etherization was kept up for only five hours; yet when the birth was completed, it was found very difficult to resuscitate the infant, in consequence of the effect of ether. For three days after, the smell of ether could be easily discovered in its breath, and the little one slept so long and soundly, that the nurse and mother became very much alarmed for its safety.

Medical Services to Naval Officers.—One of the Washington papers states, that a naval officer recently, who had had occasion to obtain the services of a physician under circumstances wherein he could not command those of a naval surgeon, presented to the accounting officers of the Government a claim to be reimbursed the money paid on this account. It was, however, ruled, that as the act of March 3, 1835, regulating and increasing the pay of the Navy, declares that the yearly pay provided in that act is all the "pay, compensation and allowance," that the officers shall receive

"under any circumstances whatever," these provisions prohibited any special allowance to officers on account of sickness, whether for medical services by a private physician, medicines, or any other expense of a similar nature.

Schools of Medicine.—In whatever school practical anatomy is taught the best, the prospects of that institution are the brightest. No one can succeed as a general practitioner, who is not conversant with the entire machinery of the human body. Students are beginning to comprehend the importance of facilities for studying anatomy. Pictures and manakins are not equal to real organized bodies. Learners should have opportunities for making personal researches, and hence the importance of good dissecting conveniences in connection with a high order of instruction. The anatomical advantages in Boston are acknowledged to be great, and from this city many distinguished professors have gone forth, having here laid the foundation of their future eminence as anatomical teachers. From what we hear of the prospects the approaching lecture season, in Boston, New York and Philadelphia, uncommon efforts are making to place anatomical facilities within the reach of every one. On the whole, on looking over the plans of operation proposed for the ensuing lectures in the prominent institutions, an elevated course of instruction may be anticipated, superior to that of any former year.

A New Hospital for Boston.—Why cannot measures be commenced for the establishment and endowment of another spacious hospital in Boston? Surely the city is now large enough to furnish patients for another institution. At least, with the rapid increase of population and the development of business, to say nothing of the process of annexation to our limits, the present excellent Massachusetts General Hospital will soon be inadequate to the requirements of this great commercial port. East Boston alone, with its steady advance in trade, manufactures and population, is really in more need of accommodation than the city proper. While there are beautiful sections of land, of ample dimensions, to be had for prices that will never be less, a sound policy would be manifested by the friends of humanity, in the immediate purchase of a site for a new and commodious hospital. Money would flow in from many an unexpected source for its support; and in all coming time, aided by the immense wealth of the merchants of Boston, it would be a favorite charity, as the other hospital has been from the day of its inauguration. One hospital cannot always, in the nature of things, take all and every one who may wish to avail themselves of the combined skill which concentrates in a well-conducted hospital. Our physicians have an opportunity to move in the matter, and with certain success, if a comprehensive scheme is devised, which shall meet the views of the benevolent part of the community at the commencement. The plan of allowing individuals to purchase a room and place a sum in trust for the support of its unfortunate occupant, is worth thinking about, because then both ladies and gentlemen might be gratified with an opportunity of transmitting their names appropriately to posterity.

Great Mortality among Physicians.—By referring to our mortuary record, it will be noticed that the mortality among physicians has been unusually large of late. We have no recollection of reporting the death of so

many, within the same period of time. Many of them were men of distinction and influence, and had lived to ripe old age; while others were cut down in early life, when the brightest prospects for the future were before them.

Note from Dr. Channing.—To the Editors. Dear Sirs,—In 1810 I went to Europe to pass a year or more in medical study. In 1852 I went again, for the relaxation and pleasure of travel, and to acquire such knowledge as might increase my professional usefulness. Since my return I have often spoken of the pleasure and advantages of foreign travel, of the courtesy, hospitality and kindness with which I was received and honored abroad, and of my grateful recollections of it all. It was to me, in truth, a new world. How often have I added, that it would be most pleasant to me to enjoy such privileges again! I have recently learned that I was about to go abroad again. This was indeed news to me. But as the report had doubtless its origin in the freedom and sincerity with which I had spoken of past pleasures, I could not but regard it as an expression of interest in my future gratifications. It has, however, had a practical bearing which has led to some inconvenience to other parties—for instance, applications for my rooms, inquiries when I was going, when to return, and what not. Now as it occasionally happens that I am consulted by my brethren at a distance, and by patients from out of town, and am sometimes employed here at home, I have thought it due to such friends to say, that I have not taken my passage in the next steamer; and to all others who take such deep interest in my "whereabout," that I mean to stay at home for the longer or shorter future I may stay anywhere. Having applied to the Council of the Massachusetts Medical Society, to be placed on the list of *retired members*, I addressed a note to the President of the Suffolk District Medical Society, in which I meant to state this fact as a reason for not reading a paper which I had volunteered at the September meeting. By the phrase "active duties," in that note, was meant official services, such as attending meetings, serving on committees, &c., which a retired member I supposed might not be expected to render.

I remain very truly yours, W. Channing.

Boston, October 6, 1854.

Massachusetts Medical Society—Commission on Lunacy.—At a stated meeting of the Councillors held October 4, 1854, the following resolutions were adopted, and their publication authorized:—

Resolved, That the Councillors of the Massachusetts Medical Society approve of the objects and purposes of the law of the last Legislature, ordering an inquiry as to the number and condition of the insane and idiotic persons within the Commonwealth; and that they also approve of the plan and manner which the Commissioners of Lunacy have adopted in making this inquiry through the several members of the medical profession in the State.

Resolved, That the Councillors recommend all the Fellows of the Massachusetts Medical Society to co-operate with and aid the Commissioners in this work—to make early report of the facts required by the Legislature, and to lend their influences to persuade all other medical practitioners, overseers of the poor, and other public officers, of whom this information is asked, to do the same, in order that this survey of idiocy and lunacy in the State may be complete. Attest, S. Parkman, *Rec. Sec'y.*

Norfolk District Medical Society.—By invitation of Dr. B. E. Cotting, the members of this Society held a social meeting at his residence in Roxbury, on Wednesday evening, October 4th. The occasion will be long held in pleasant remembrance by those present. Dr. S. Durkee was among the guests, and entertained the company by an exhibition of specimens of microscopical anatomy, prepared by himself. Dr. Durkee's zeal and proficiency in this branch of medical science are well known, and it was a rare privilege to be allowed to examine his well-arranged and beautiful specimens of the various tissues of the body, and, aided by his explanations and illustrations, to witness some of the wonderful revelations of the microscope. After a sumptuous repast, a series of appropriate and pithy sentiments elicited brief addresses from several gentlemen. The evening passed off very pleasantly, and the company separated, deeply indebted to Dr. Cotting for the very agreeable entertainment which he had furnished them. *

Medical Miscellany.—A Mrs. Green, of Chicago, died very suddenly in that city, on the 16th ult. A post-mortem examination revealed the presence of strychnine in her stomach, which, it is alleged, was administered to her by her husband, who has been arrested.—By the annexation of the city of Charlestown to Boston, a dozen or more of the physicians of the former city will probably become members of the Boston Medical Association, and Suffolk District Medical Society.—Our city continues to be remarkably healthy.—Dr. John Heard has been appointed post-master at Leominster, Mass.—Dr. Wm. H. Davis is in prison, for shooting a man at San Juan.—Dr. Samuel Bradshaw has been nominated for Congress at Doylestown, Penn.—Elizabeth Currie, of Liverpool, Eng., now 109 years of age, and in excellent health, has been a regular, habitual smoker since her 18th year.—Smallpox is on the increase at several points in New England.

ERRATUM.—In the last number of the Journal, in a notice of the State Commission on Lunacy, instead of alluding to two or more patients being reported from the same town, we meant to have spoken of one patient being reported by two or more physicians.

PAMPHLETS RECEIVED.—A prize essay on difficult labors and their treatment, by M. B. Wright, M.D., of Cincinnati, Ohio. A gold medal was awarded the author by the Ohio State Medical Society.—Observations on some of the remedial properties of simaba cedron, and its employment in intermittent fever, by S. S. Purple, M.D.

DIED.—In Reading, Penn., J. P. Hiester, M.D., 52. Dr. H. was one of the oldest subscribers to this Journal—was one of the leading members of the profession in his State—has held many important offices, and was well known as a naturalist.—In Avon, Conn., Dr. Julius Willard, aged 60.—At Weare, N. H., Dr. Philip Cilley, 86.—In New York, Edward Bullus, M.D., 50.—At Holding, N. H., Dr. Samuel Wright, 58.—At New Orleans, of yellow fever, Valentine Mott, Jr., M.D., son of Dr. Mott, of New York, aged 33.—At Cincinnati, Dr. P. S. Conner, 41, a native of Newburyport, and a graduate of Dartmouth College, of the class of 1835.—In Heath, Dr. Timothy H. Brown, 42.—In Savannah, of yellow fever, Drs. P. H. Wildman, F. W. Schley, S. N. Harris, T. M. Ellis and C. H. Welles.

Deaths in Boston for the week ending Saturday noon, Oct. 7th, 79. Males, 43—females, 36. Inflammation of the bowels, 2—disease of the bowels, 3—burns, 1—inflammation of the brain, 1—congestion of the brain, 1—consumption, 15—convulsions, 2—cholera infantum, 1—cholera morbus, 1—croup, 3—dysentery, 5—dropsy, 1—dropsy in the head, 3—drowned, 3—infantile diseases, 6—puerperal, 1—exhaustion, 1—erysipelas, 1—fever, 1—hemorrhage, 1—hooping cough, 1—disease of the heart, 1—intemperance, 4—marasmus, 3—old age, 1—pleurisy, 1—palsy, 1—rheumatism, 1—scrofula, 1—smallpox, 1—teething, 4—thrush, 6—worms, 1.

Under 5 years, 35—between 5 and 20 years, 9—between 20 and 40 years, 16—between 40 and 60 years, 11—above 60 years, 8. Born in the United States, 51—Ireland, 20—British Provinces, 1—England, 2—Scotland, 1—Germany, 1—unknown, 3.

Death of Dr. L. Parmlee.—We learn with profound sorrow that Dr. Ludolph Parmlee, dentist of Mobile, Ala., died during the latter part of July. Dr. P. had resided in Mobile about twenty-two or twenty-three years, during which time, he enjoyed, and deservedly too, a large and lucrative practice. In his death, the profession and society have lost one of their brightest ornaments, and most sincerely do we sympathize with his family and numerous relatives in their bereavement. Dr. P. was an honorable, a high and a liberal minded gentleman, as well as a scrupulously conscientious and eminently skilful practitioner.—*Am. Jour. of Dental Science.*

Atmospheric Phenomenon.—A phenomenon of a remarkable kind was experienced on Tuesday at some parts of the city of Bath. During the afternoon, there fell from the clouds a large number of drops, which were at first supposed to be rain, but which, on being examined more closely, were found to consist of a gelatinous substance of about the consistence of thin starch. Upon being submitted to the microscope, the spots were found to be thickly impregnated with eggs, perfect in form, but exceedingly minute in size—so minute, indeed, as to be altogether invisible to the naked eye.—*London Lancet.*
